SECTION III.

The folly of pride.

If there be any thing which makes human nature appear ridiculous to beings of superior faculties, it must be pride. They know so well the vanity of those imaginary perfections that swell the heart of man, and of those little supernumerary advantages of birth, fortune, or title, which one man enjoys above another, that it must certainly very much astonish, if it does not very much divert them, when they see a mortal puffed up and valuing himself above his neighbours, on any of these accounts, at the same time that he is liable to all the common calamities of the species.

To set this thought in its true light, we shall fancy, if you please, that yonder molehill is inhabited by reasonable creatures; and that every pismire (his shape and way of life only excepted) is endowed with human passions. How should we smile to hear one give an account of the pedigrees, distinctions, and titles, that reign among them!—Observe how the whole swarm divide, and make way for the pismire that passes along! You must understand he is an emmet of quality, and has better blood in his veins than any pismire in the molehill. Do you not see how sensible he is of it, how slow he marches forward, how the whole rabble of ants keep their distance? Here you may observe one placed upon a little eminence, and looking down on a long

pet; but thou obeyest not the ordinance of thy God, if thy worship be for strife and debate. Behold the sacrifice that I have chosen: is it not to undo the heavy burdens; to let [illegible] and to break every yoke? [illegible] the hungry; and to bring [illegible] out, to thy house?" And [illegible] the presence of God, [illegible] sackcloth and ashes; and w[illegible]ss, to do as the Lord had [illegible]

PERCIVAL.

Abraham an[illegible] wisdom and [illegible]

DOMESTIC [illegible] ex families in the very child[illegible] even of a brother was she[illegible] But with how much tenderne[illegible] Abraham pre-vent the disas[illegible]y arisen, as is but too freque[illegible] quarrels of servants! He sai[illegible], let there be no strife betwixt me and thee, nor between my herdmen and thine." And why? For the tenderest reason in the world: "because, we are brethren." The very image of the patriarch in the attitude of entreaty, the paternal tear just starting from his eye, is this moment before me: and thus, methinks, I catch instruction from the lip of the venerable man [illegible]

Dorsey's Lectures

Volume 1st.

Materia Medica

Lecture 1st. All public teachers should confine their attention as much as possible to the elementary doctrines of the ~~branch of~~ science which they have chosen as the subject of their lectures. In ~~treating of~~ the Materia Medica, however, it is necessary to ~~be acquainted with~~ consider certain circumstances, which, though they do not in the strictest sense of the word belong to this branch ~~of~~ ~~medicine~~, ~~yet~~ are yet so closely connected with it, that ~~when~~ an acquaintance with them is necessary to an accurate knowledge of the operations of medicines. It would be impossible to judge properly concerning the action of any articles on a living body, without understanding ~~the nature~~ its nature, and being more or less familiar with the laws which govern it. From another chair ~~I~~ you will be made acquainted with the

most important of these:- I confine my attention to such as more particularly ~~con~~ concern the subject ~~on~~ of which it has now become my duty to teach. I shall commence with some remarks relative to Animal Life.- Life is defined by Johnson "union & cooperation of soul with body; present state; enjoyment or possession of terrestrial existence; &c." ~~All of~~ A definition, from its brevity, is almost always incomplete; yet ~~almost~~ every one knows, well enough for the purposes of language, what is meant by the term life. Were I to attempt a definition - I should go upon the ground that we can distinguish it only by its properties - & should state those ~~a~~ alone which necessarily belong to it. I should say that it consists in the power

of resisting putrefaction and Chemical decomposition, and of preserving a temperature different from that of surrounding objects. These are the only properties which are strictly peculiar to Life. Many mineral substances (as the metals) have the power of resisting to a certain extent Chemical Decomposition. But they possess not the faculty of maintaining a temperature different from that of the bodies around them. Animals, however, though they possess, do not always exert the power of regulating their temperature. In a frozen fish, life may exist, though it lies dormant with regard to one of its faculties. The fish cannot be made to putrefy. For the heat which is requisite in ordinary cases to produce putrefaction, restores to the animal the exercise of the vital functions. ---

Some suppose that motion, sensation, & thought

constitute perfect life: but the fact is that life may exist entirely independent of all of them. I converted a fish into a mass of ice, in which certainly there could be nothing like either motion, sensation, or thought; yet it ~~was~~ retained vitality. ~~To~~ I suppose it dead would be to suppose a miracle: for nothing but a miracle can restore life to an animal that has died; and upon the application of heat the fish regained the exercise of all its functions. But as we have no reason to believe that miracles are wrought in such cases, we must conclude that ~~life~~ the fish when frozen possessed life; & if so, that it possesses perfect life. For though there are various grades of animals, some being endowed with a greater number of organs than others, or with the same organs more delicately constructed, yet the principle of life is equal in them all; is as perfect in the ~~polypus~~ lowest, as in ~~the man~~ the

highest ~~of animals~~ in the polypus as in man. — We are acquainted with no intermediate state in which the ~~living principle~~ vital principle can exist. How long the ~~actio~~ usual actions of life may be suspended we cannot determine. Mr. Hunter thought that if a ~~human being~~ man could be frozen suddenly, he would remain alive for a century. — This, though not probable, is not demonstrably erroneous. —

Many, among whom are Brown, Cullen, & Rush, consider life as a forced state, depending upon the action of certain stimuli upon ~~dead~~ matter. In dissenting from their opinion I am led ~~only~~ solely by love of truth, and not by any desire to build a reputation by overthrowing the doctrines of others. ~~I thi~~ ~~It is impossible that any stimulus or to produce life in dead matter, and hence we derive a strong objection~~

To Rushes theory I object that it is impossible for any stimulus to excite life in dead matter. As soon as we see an apparent effect of this kind produced, it is a proof that life previously existed. We know that by the application of heat to a frozen fish, and of heat with moisture to a grain of corn we may excite their action, and in the one case restore ~~former~~ the exercise of former powers, in the other ~~produce~~ develop faculties which had before been latent. Here the advocates for the doctrine above mentioned, say that there is a capacity for life in the fish & grain of corn. But a capacity for life is life itself. - ~~If~~ Since by the result the vital principle is proved to exist, it must before have existed either in the stimulus or in the body on which they act: but no one pretends to say that heat is alive. ~~Therefore~~ A necessary consequence is

that the vital principle does exist in the germ of vegetables & in like manner in that of animals. —

Most of the actions of life result from impressions made by stimuli on the living body. Sound stimulates the ear, light the eye &c.; but in no case is the sensation created by the sound or the light alone. Can any vital action take place which does not result from the ~~influence~~ impression of stimuli? This is a question not easily solved. We may, however, conclude that the actions of life are forced; but that the principle must previously exist, and is not the result of stimulation. Hunter says that there is a sense in which life may be considered as a forced state; as it is a power impressed on matter by the Creator. We loose nothing by this. ~~But~~ It is not the result of stimuli, & therefore not a forced state according to the

meaning attached to the words by Brown, Rush & others.

An interesting subject of inquiry is whether organization is essential to life. We find many ~~amo~~ living beings in which very few signs of this are visible. The hydatid ~~in the~~ which is found in the head of sheep is generally admitted to be an animal, and consists of nothing more than a simple bag filled with fluid. ~~The function of animals an~~ It is probable that the function of digestion is the only one carried on by this order of beings. — We are assisted in the inquiry respecting the necessity of organization to life by investigating the properties of blood. That life is prospered by this fluid was ably maintained by Mr. Hunter. He says that his opinion would be more prevalent, were it not for the difficulty of admitting that life can exist in a

fluid. We have been so long accustomed to connect the principle of life with the organs by ~~of~~ means of which ~~it~~ ~~we~~ its actions are produced, that we feel a hesitation in allowing that it can exist entirely without them. We are, however, as Mr. Hunter observes, like the inhabitant of the torrid zone who could never be brought to believe that water can be converted into a solid substance. ~~After all the considering all the circumstances it~~ We ~~have been~~ are too apt to connect life & organization together: I shall endeavour to show that they are not necessarily connected. — The experiments of Mr. Hunter will here be of great assistance. — He found ~~that by~~ upon ~~exposing~~ exposing eggs to a temperature of 100°, that those which were to be hatched remained sweet for 8 weeks, while those which were incapable of producing a chicken putrefied in a ~~less time~~ shorter time. Eggs of course possess

the power of resisting putrefaction & ~~an~~ therefore have life. Mr. H. also found that fresh eggs when placed in a freezing mixture retained their heat longer than such as had previously been frozen & again thawed. A fresh egg was placed in a temperature of 15° of Fahrenheit: ~~it &~~ its temperature sunk as low as 29° & it still remained fluid: - in 25 minutes it arose to 32° & was frozen. ~~A dead egg exposed to an equal temp~~ An egg which had been deprived of its vitality by having been previously frozen, ~~& the thawed~~, was exposed, after being thawed to the same temperature with the living one just mentioned, and became rotten immediately. No further proof is necessary to establish the fact that life may exist independent of organization. Fresh eggs resist heat & cold & putrefaction, and ~~such life an liquid~~ are therefore possessed of a vital principle.

Life is a power ~~imparted upon~~ imparted to matter by the immediate hand of the creator. In its simplest state it is such as I before defined it. As we rise in the ~~scale~~

scale of animals, we find it more complex as we proceed, and more so in man than in any other being which comes under our notice.

These views respecting life I have detailed because of their importance in a practical point of view. From applications to living matter we are not to expect the same results with those which we experience from ~~the same~~ applications to matter without life. Too little attention has been paid to this truth. In the use of your remedies you should always remember the adage "Medicamenta non agunt in cadaver". With regard to the properties of life which influence the operation of medicines you will receive instruction from another chair. I shall, however, speak of a modification of irritability which is of vast importance to every practitioner, an acquaintance with I allude to Sympathy. This I define to be <u>Action from remote impression</u>. By remote I do not mean

that the impression must be in some distant part; but only that it is in a part distinct from that in which the sympathetic action takes place. Etymology does not bear me out in my definition. For sympathy, if we regard its derivation, ~~means~~ is a passive not an active ~~passive~~ term. But this is of little consequence. Synergy might perhaps do better, but as the former word has been long in use, it ~~would~~ is unnecessary & impolitic to alter it. Sympathy has also been called "consent of parts", "association of motions" &c. It may be illustrated by ~~many~~ a familiar ~~factor~~ circumstance. It is by sympathy that we feel pain in the shoulder when the liver is diseased. We must here remark that the pain in the shoulder, though produced remotely by ~~the affection~~ hepatic affection, is yet the immediate result of a morbid action in the part to which it is referred.—

So extensive is the operation of this principle of sympathy, that I doubt whether the circulation of the blood is more important. — It is divided into Universal & partial; the former where the whole system sympathizes with some local affection, as when fever results from ~~local~~ injury of any part, tetanus from wounds, &c; the latter where one part is affected by disease or injury in another. The partial is divided into the Remote, Contiguous, & Continuous. An example of the first is the affection of the shoulder in the liver complaint. ~~This~~ That is called Contiguous sympathy, by which two parts in mere contact, ~~without being connected together, except by~~ are influenced ~~by~~ one by the disease of ~~the~~ other. Continuous sympathy is ~~that~~ by which the effects of an injury are enabled to spread in every direction from the part first affected. — There is also a sympathy from

sensation, which also may be general or partial. — Of the latter sighing may be considered as an example; of the former, that universal tremor of the frame which seizes us when we are affected strongly by any emotion. — To general sympathy of this kind Mr. Hunter ~~owes~~ his death. — Of late years many phenomena have been proved to result from sympathy, which had previously been attributed to other causes. One of the most prominent of these is Hectic fever. This was was formerly supposed to arise from the absorption of pus. But it has been known to occur where no pus had been secreted; or, on the contrary, pus has been secreted in large quantities without producing it. At present there is no doubt but that it arises from the sympathy ~~between~~ of the system with the local affection. The action of medicines

is much more dependent on sympathy than was once imagined. Formerly it was believed that they were absorbed & taken into the blood-vessels. - The sympathetic connection between the stomach & other parts of the system explains their operation in a much more satisfactory manner. That viscus seems to be particularly connected with the heart & blood-vessels, as appears from the sudden effect produced on the circulation by swallowing a glass of wine. ~~on the~~ It is also closely connected with the brain & nerves. Apoplexy often results from an affection of the stomach, and Pneumus, you all know, very generally depends upon eating too copiously just before bed-time. The skin also sympathizes with the stomach. The drinking of cold water produces a perspiration; errors of diet are very apt to occasion various eruptive diseases. - In Dyspepsia there is hardly an organ of the body which is not affected, ~~not~~ nor a function

which is not deranged. In Yellow fever too, which is a genuine Gastritis, the various parts of the System very often are affected sympathetically. ~~A woman in the~~ The case of a woman who dies in the City Hospital during the prevalence of the fever, illustrates this fact. While ill, she complained of nothing more than a a severe pain in her foot. After death Dr. Physick opened her, & found evident signs of inflamn of the stomach, which was filled with black-vomit.

Idiosyncrasies are often a species of sympathy of a peculiar kind. With some persons the smell of ipecacuana produces ~~effects~~ consequences extremely disagreeable, affecting their breathing, & ~~producing~~ causing a kind of asthma. Fish, in many, invariably causes, when swallowed, an attack of Urticaria. These Idiosyncrasies are of ~~not~~ great importance, and should always if possible be ascer-

taine before medicines are administered.

There is another pathological principle of great practical importance; - I mean the incompatibility of various actions in the same place at the same time. This principle may be illustrated by many cases, where one set of morbid actions have been followed & removed by another. Thus a person may be inoculated with the small pox, & the variolous fever may have appeared: in the mean time an attack of the measles may take place & suspend the action of the small pox - which, at the termination of the measles, will again be renewed. A case of this kind was observed by Hunter, ~~which~~ and ~~I~~ induced him to make the assertion that no two actions can take place at the same time * in the same part. Subsequent observation, however, has proved that there are exceptions to this

general rule. ~~It can~~ ~~It~~ Nevertheless as a general rule it stands unshaken. It is by this principle that the General disease is removed by mercury, Intermittent fever by bark, Tetanus by opium &c. — Indeed every case of the cure of a disease by the use of medicines, is illustrative of the incompatibility of a plurality of actions in the same part.

Aliment

| Lec. 2 | Materia Medica comprehends not only those articles which possess active medicinal virtues, but also such as are used for food & drink. Hence the substances included under this general term have been divided into Alimentary & Medicinal. If formerly too much attention was paid to the Materia Alimentaria, of late years ~~the~~ it has been as much neglected. The regulation of diet has lately been left to the judgment of the nurse, while the physician ~~cont~~ has contented himself with the prescription of medicine. It must be plain to every one who has practised medicine in this country, that our diseases require a much closer attention to regimen, than in Europe is now given to that subject. It is important for you to know what articles of food are adapted to particular cases; and to be able to ~~avail~~ avail yourself in the treatment of diseases not only of the Materia Medica, but also of the Materia Alimentaria. Under the general head of nutrientia ~~may~~ ~~is~~ are comprehended all those substances which are nutritious, whatever we ~~take~~ use as food or drink, or

whatever articles are taken along with them into the stomachs to render them more gratifying to the palate. We have not time to enter into an examination of the ultimate principles of that class of substances which we are now ~~going~~ about to treat. However interesting such an examination might be, it certainly is not of practical importance. It is our business to consider the results; to the Chemist & ~~to~~ Natural Philosopher we leave the trouble of the investigation. Aliments may be divided into vegetable & animal; to the former we will at present give our attention. —

Vegetables.

The general character of ~~those~~ vegetables which serve for food, is mild & bland. Such as are acrid, bitter, or possess a strong smell, are endowed, in general, with ~~the~~ medicinal properties. There are some exceptions to this rule. Sugar is eminently sapid, ~~yet~~ and is also very nutritious. Certain odorous ~~substances~~ vegetables, as garlic, and onions, contain a considerable portion of nutriment. Some substances serve as food for one animal, & are medicinal to another. The horse will eat the conium maculatum, which to

a man is poisonous. - There are vegetables which in their recent state are deleterious, but when boiled serve very well as articles of diet. Of this kind is the Indian Turnip; and even the common potato when raw is not destitute of acrid properties. Cassada is another article of a similar nature. - Most vegetables which are aromatick, and possess strong odour & taste, when they are used with food, are employed as condiments. They may contain ~~a small portion of~~ some quantity of nutriment, but the proportion is small. ~~A gran~~

A question of ~~so~~ considerable interest has often been agitated, whether man was intended to live wholly on vegetable food, or on animal; or whether ~~the~~ a diet taken from both kingdoms is not ~~no~~ better adapted to preserve health. In a civilized state man is undoubtedly omnivorous. Ocean, air, and earth are ransacked to find food which may gratify his palate; and the culinary art is cultivated with the closest attention. But that vegetable food alone is sufficient to support life, is evinced by the fact that whole nations ~~live on that al~~ subsist entirely upon it. In Persia the lower classes of the people live almost solely on dates,

and never touch animal food. In Constantinople ~~the poor~~ ~~derive it~~ ~~on~~ cucumbers & melons constitute the food of the poor. The hardy race which inhabits the Highlands of Scotland live principally upon oat-meal; & rice is almost the only article of diet used by the ~~#~~ lower class in Hindoostan, & some of the East India islands. It is a fact that man may change his diet with greater facility than almost any other animal. A carnivorous animal, it is true, may, by degrees, be brought to live on vegetable food; but the change must be slowly & gradually effected. Man, on the contrary, may be suddenly deprived of the usual articles of diet, & confined to a single one. Boerhave mentions one of the Rulers of Holland, who, to ascertain on how little a man could live, ~~on~~ made use for a considerable time of no other food than peas. Dr. Stork ascertained the same fact by experiment. Dr. Eugen of S. Carolina was confined for 8 months in one of the dungeons of Germany, and fed on bread & water. At the end of that time he was fatter than when he entered the prison, & his principal complaint during his confinement was, not ~~with~~

respecting the poorness of his fare, but that he did not get ~~many~~ enough to eat. On the other hand there are many examples of an opposite nature. There are whole nations which subsist on animal food alone; and many tribes whose only support is fish. In Lapland & the other Northern regions, where during the long winters no vegetables can grow, ~~preserve~~ the inhabitants make use of ~~y~~ the game which they have preserved. The ancient Scythians are said to have subsisted wholly on animal ~~as do many the Tartars~~ food; as at present do the Tartars their descendants. The Patagonians are said to detest vegetables, ~~for~~ and to live principally on horse-flesh. There are some countries so sterile as to produce nothing, the inhabitants of which have no other support than what they derive from the shell fish which they find along the shores. —

— If we bring Comparative Anatomy in to assist us in deciding the question, its evidence will tend to prove that we are made to ~~eat~~ eat both vegetable & animal food. — Man has both the incisor teeth of carnivorous, & the molar

of herbivorous animals. His intestines are ~~not~~ longer than those of the former, and shorter than those of the latter. — From these facts we may conclude that ~~man was~~ we were intended to live on both vegetable & animal food; and Revelation confirms the conclusion; when at the same time that it tells man to till the earth, it also orders him to slay & eat. Hence we should infer that a Diet exclusively either of animal or vegetable food would be injurious to health; and we find this to be the case. For if a person accustomed to a mixed diet, be wholly confined to vegetable food, he is ~~very~~ liable to Dyspepsia, debility, the various bowel complaints &c; & if to animal, eruptions, scurvey, leprosy and many other diseases are apt to ensue. — Nature has pointed out the proper diet, by yielding that ~~most at~~ species of food more abundantly, which is best adapted to any particular climate. — Within the tropics vegetables grow most luxuriantly, & in the northern latitudes animals are found in greater abundance. If a diet be chosen

exclusively from either kingdom, vegetables are undoubtedly to be preferred. Sir George Staunton in his embassy to China informs us that the natives recover from injuries & surgical operations with wonderful facility; and that many cures take place ~~this~~ from wounds ~~wounds~~ which in an European would prove fatal. This facility arises from the mildness of the inflammation, which is properly attributed to the diet of the inhabitants

The seeds, leaves, and roots of plants ~~are~~ are the parts most commonly employed as food; though the sugar, gum ~~&c also~~ ~~which~~ ~~&c~~ &c obtained from them are also used. - A tolerable estimate may be formed of the nutriment which any article of diet contains, by ascertaining the quantity of sugar, starch, or oil, which it may be made to produce. There are, however, many exceptions to this proposition. - The cauliflower, mushroom, leek, artichoke &c. cannot be made to produce either of the above mentioned substances, & yet contain a considerable portion of nutriment.

— The farinaceous seeds, as wheat, rye, &c. seem to undergo, by time, a gradual change, 1st into starch, & then into sugar. The older the wheat the more is the starch which can be obtained from it; and of this the manufacturers of that article are well aware. — What connection there is between sugar, and the saccharine property of the chyle I am unable to determine. — When it is remarked that the sap of vegetables contains sugar we should expect to find it very nutritious; & so in fact it is. — There are some vegetables the sap of which seems to be pure sugar dissolved in water, as the ~~sugar~~ cane of the West Indias, & the ~~sugar~~ maple of our Western states. — It is very strange that Cullen should express doubts whether sugar is nutritious by itself. — ~~How far~~ His opinion relative to the nutriment contained in acids is certainly carried too far. That the stomach has the power of digesting ~~almost any~~ in some degree almost every vegetable that is offered to it, there can be no doubt; but that

acid is much less nutritious than sugar is equally true.— The oil of vegetables furnishes much nourishment. This Cullen very clearly proves. Dr. Horte lived for 16 days on olive oil & bread, and at the end of that time had gained 4 lb. Dr. Darwin says that oil mixed with ~~the~~ ~~mucilage~~ ~~substances~~ mucilage is very easy of digestion; as for instance in milk.— ~~The~~ That it is digestible when mixed with other substances is ~~equally~~ proved by the universal practice of certain countries.— Olive oil is very extensively employed in Italy, & is there combined with various articles of diet. No food is more common in this country than bread & butter.— Gum or mucilage ranks high among the nutritious articles obtained from the vegetable kingdom. It is distinguished from resin by being insoluble in alcohol. Gum arabic is the purest of this class of substances, and is used as a common article of diet in some parts of the Eastern Hemisphere. In this country it is very much employed in the intestinal diseases of

children. To the inflamed bowels it is a soothing application, even less irritable than the fluid secreted by them. It is sufficiently nutritious, and, on account of its purity, does not readily become acid. I have been in the habit of using it in Cholera Morbus to the exclusion of all other food. My method of preparing it is merely to ~~mix it with~~ dissolve it in water, and to add some sugar to render it palatable. — The mucilage of gum arabic is a very good substitute for milk, when we wish to stop vomiting by the administration of lime water in combination with this ~~article~~ fluid. The milk is sometimes rejected immediately curdles & sours. In such cases the mucilage will often remain.

In giving a particular account of the vegetables ~~most commonly~~ which serve for food, I shall confine my attention to such as are most commonly ~~in~~ employed in this country, and ~~to such as~~ are most useful in a medical point of view. I shall pursue no other order than what the degree of importance in the article may

Duggert.

The most important class of vegetables is that of the Cerealia, by which are meant all sorts of corn or seeds from which bread is made. These seem to be nutritious principally by their gluten & fecula. Dr. Cullen says they derive their power of nourishing from the sugar & oil which they contain. They no doubt ~~p~~ have the elements of these substances in their composition, but as ~~they do not exhibit~~ the~~ir~~ sensible qualities are not exhibited, they certainly cannot be said to owe their ~~power~~ nutritious property to them. — The cerealia are different as articles of diet. I shall first speak of wheat.

Triticum or Wheat.

Respecting the natural history of this plant I shall say nothing; its general history is well known. It constitutes the larger portion of the food of civilized man, and is ~~the~~ most important vegetable which is produced. ~~There~~ Before it is made into bread it must undergo a variety of processes, concerning ~~the majority~~ many of which,

as grinding &c. I say nothing. Relative to the more immediate process of making bread ~~I~~ some remarks will be proper ~~for me to make some remarks~~; and these will also apply to the other grains from which this article of diet is made.

The seeds of wheat contain a small quantity of mucilage which is soluble in ~~wa~~ cold water; starch, which is soluble in boiling water; & gluten, which is soluble neither in water, spirits, oil, nor ether. In the formation of bread, the flower first ~~bea~~ mixed with water & leaven, or yeast, is converted into dough. When this is heated, the air which the yeast or leaven contained is extricated & expands the mass. In this state before it has had time to become acid, it is suddenly exposed to a much higher temperature, which ~~stops~~ arrests the incipient fermentation, & extricates more air ~~which being retained~~ This retained ~~by the~~ at 1st. by the tenacity of the mass & afterwards by the crust which is formed around, enlarges the loaf still more, and fills the whole of it with little cells. – The moisture is evaporated by the heat & the dough is converted into bread. – The incipient fermen-

tation which it undergoes ~~is~~ has been thought to render it more easy of digestion. Dr. Pennington, however, has proved that the change is not a species of fermentation, and I have used the word merely in compliance with ~~the~~ common custom. His explanation of the process is, that the yeast contains carbonic acid, which ~~is~~ escapes on the application of heat, and produces the phenomena which we have remarked. — It is probable that the mode of forming bread causes a difference in the combination of its ingredients which renders it a different substance from the farina. The practice of making leavened bread is very ancient, and ~~we~~ is often alluded to in the Bible, as well as in the profane authors. It is generally supposed to be more easily digested than the unleavened: but it has been found that unfermented bread ~~is~~ is quite as easy of digestion as the fermented. We may infer the nutritious quality of bread from the fact that Dr. Franklin lived on 16 lb. of it for 2 weeks, ~~and~~ Dr. Stork when he ate 38 oz. a day, increased regularly in weight. To

prove that leavened bread is wholesome we have the experience of whole nations; and there is not a hardier race than the mariners whose principal vegetable food is crackers or unleavened bread. The fact is that both kinds are wholesome ~~when in~~ when the person who eats them is in a state of health. In disease sometimes one, sometimes the other is most suitable, and it is the experience of the patient ~~which must decide~~ that can alone decide between them. Some dyspeptic persons prefer crackers, others leavened bread. In diarrhoea & the several bowel complaints the former is in general to be chosen. Stale bread is commonly easier of digestion than fresh, & the crust easier than the crumb. Bread should always be well baked before it is brought on the table, especially when the person who is to eat of it, is affected with dyspepsia or some other bowel disease. Dough is ~~of all~~ extremely difficult of digestion. ~~A gen~~ I am acquainted with a gentleman

~~to~~ of this city, a trustee of the University, who returning from a hunt in Germany extremely hungry, ate largely of some unbaked bread, and in consequence was attacked by a fit of asphyxia which continued for several days. Fresh baked bread is ~~equally~~ often equally injurious. Toasting bread is a process which renders it much more suitable for a person whose organs of digestion are debilitated. The watery particles are evaporated, and a kind of coal is produced which is of considerable advantage. – A beverage made of toast soaked in water is ~~very~~ exceedingly well adapted to cases of sickness, where we wish to pursue a plan strictly antiphlogistic. – I have sometimes confined my patients to this alone for several days. A very little nourishment is sufficient to maintain life, and there is a well attested case of a ~~two~~ patient who, ~~lived on water alone~~ for 40 days, lived on water, without any food. – Indeed in inflammatory diseases much may be gained by con-

* See Cullen's Materia Medica vol. 1st.

finement to a low diet. This term, however, is ambiguous. I knew a person who said that he used a low diet, and on being asked ~~what~~ more particularly, answered, among other things, that he drank only a pint of wine a day. — In some instances if we restrict our patient only to what commonly would be considered a low diet, we shall fall far short of the mark at which we ought to aim. —

Lec. 3 Van Swieten, from mistaken views of pathology, believed that unfermented farinaceous matter was a ~~gre~~ powerful agent in the productions of disease. Cullen very satisfactorily refutes this antiquated notions.* To his remarks we may add, that children in this country are very often fed almost exclusively on Indian meal; and that no class are more healthy & robust, than those who are nourished in this way. Hippocrates declares that unfermented bread is not so easy of digestion, but when the stomach will receive it, is more nourishing than the

fermented. Buchan and Sinclair remark that seamen, when they change their diet from sea-biscuit, to our common bread, almost always become weaker. This would seem to confirm the opinion of Hippocrates: but a better explanation may be found in the fact, that crackers, being more compact than bread, contain more nutriment in the same space, ~~so, induce the seaman to eat it~~ if an equal bulk of the two articles be taken, must of course afford a larger quantity of real aliment. —— There are other modes of preparing flour, which I shall briefly notice. - Pastry, made by mixing flour with butter or animal fat, and baking it, is of very difficult digestion. Tarts, pie-crust, butter-biscuit &c. should always be interdicted to patients who are liable to ~~in cases of~~ heart-burn, flatulence, cholic &c. Indeed, you will frequently effect cures of chronic complaints of the bowels, by forbidding the use of pastry as a dessert. It ~~There~~ is another disadvantage ~~in~~ arising from the employment of these articles after dinner, - that they force the stomach to do double duty. - We should be generally satisfied with the meat

and vegetables which constitute the first part of the meal, were not our appetites tempted by the sight of the second course.

I have now completed my account of ~~the~~ wheat, & shall proceed to make some observations on the

Secale or Rye.

This article resembles wheat in many of its properties; but there are some points of difference. It contains more sugar, as appears both from its being sweeter to the taste, & yielding more ~~spir~~ alcohol on distillation. Much of the spirits which is used by the lower orders in this country, is obtained from rye. One of our greatest blessings is thus converted into our greatest curse. It would be better for the world that it ~~had~~ should never have been ~~made~~ created, than that it should be put to such an use as this. The inferior classes of society in the middle states, have evidently become more corrupt in their morals, in consequence of the general ~~employment of~~ employment of whiskey.

Rye is more ~~and~~ acrescent than wheat, & is also more laxative. Hence it is useful as an article of diet in habitual costiveness, and improper in an opposite condition

of the bowels. In some cases of disease it is of great consequence to have regular evacuations, without a resort to cathartic medicines. In prolapsus ani obstinate costiveness, or great relaxation are equally injurious. Here purges do not answer; and the use of rye mush, made by boiling ~~rye~~ the flour in water, ~~is~~ and taken for breakfast & supper, will prove of the greatest advantage. Dr. Physick, by this simple plan, has effected many cures in Prolapsus Ani, when the disease had resisted the best directed plan of treatment according to the common mode. —

Rye-flour answers very well for cataplasms, the paste being less elastic & glutinous than that of wheat.

Hordeum or Barley

This grain contains a large quantity of nutritious matter; and its sugar is either in greater abundance, or more easily evolved than in the other. Malt liquors may be made from some ~~of the~~ other ~~grains~~ of the cerealia, but neither

so great in quantity, nor so good in quality. Cullen says that Barly is less nutritious than the rest, because it contains less oil. But this reasoning is not to be admitted. — By the Humoral Pathologists it was ~~thought~~ to be antiseptick; — this idea, however, has passed away, with the fall of the theory to which it owed its origin. It has been incontestibly proved that putrefaction never takes place in the blood-vessels of a living animal.

— Barley may be made into bread; — but answers better when prepared in other ways. — Barly-water is a beverage which may sometimes be prescribed, ~~when~~ with advantage, when we wish to confine the patient to an antiphlogistic diet. If I were to ~~of~~ make a scale of drinks according to the quantity of nourishment they afford, I should place lowest on the list, ~~toast & water~~ simple water, next toast & water, then barly-water & mucilage of gum arabic, lastly the same articles combined with loaf sugar: — but of this more hereafter.

—— Barley decorticated, or deprived of its shell ~~has~~ is ~~been~~ called pearl-barley. But this is an useless, & even ~~hurtful~~ noxious preparation ~~practice~~. Warm water extracts the mucilaginous

part as well from the common as from the pearled, and the latter is apt to become mouldy, thereby rendered disagreeable to the palate & injurious to the stomach. Besides, I would recommend the Barley in its natural state, were it merely on account of the comparative cheapness of the article.

Oryza or Rice.

This differs from the other Cerealia in containing much less of the ~~ace~~ accescent principle. ~~I~~ Its nutritive property is demonstrated by the fact, that whole nations subsist almost entirely on it; so that when there is a scarcity of this article, famine is an universal result. From its containing no saccharine matter, it is very useful in many bowel complaints;- as Dyspepsia, Diarrhea, Chronic Dysentery, &c. ~~It~~ Owing to its being adapted to the two latter diseases, it has been said to be astringent: but this is not the fact. Whatever irritates the bowels in Dysentery &c. occasions purging; and by confining the patient to the use of food which does not possess this irritating quality, we give nature an ~~opport~~ ~~no~~

opportunity of effecting a cure. It is thus that Rice proves advantageous. In some cases of Dyspepsia no other vegetable can be taken. A few instances, however, occur, where even rice becomes sour on the stomach: but these are comparatively rare. With respect to the prejudice which exists in the Southern States, that ~~the~~ the use of this grain causes inflammation of the eyes; all of you must be well aware that it is utterly unfounded.

Avena or Oats.

These, in our country, are so little employed as food, except for cattle, that I do not think it worth while to say much concerning them. In Scotland the lower classes ~~to~~ are almost exclusively supported by them. — Dr. Cullen recommends a preparation of oats as a drink in some diseases. His method of preparing it was to ~~take~~ put 1 oz. of oats, ~~which was placed~~ into 3 qts. of water, which were boiled to 2 ~~qts~~ qts. & decanted. — Our nurses sometimes when ~~tak to~~ make ~~oat~~ ~~wa~~ a rich soup of this grain, which hardly even

fails to prove cathartic. This, in low cases of disease, is often extremely injurious.

Fagopyrum or Buckwheat

This grows in great quantities in America, but is a native of Greece, and some parts of Asia. ~~Any~~ It is more used in our country as an article of food than in any other. Buck-wheat cakes when well raised are not unwholesome: but soaked in butter as they sometimes are, they constitute a mass very difficult of digestion & never to be allowed ~~to~~ in cases of Dyspepsia. - The next article which claims our attention is the -

Zea, Maize, or Common Indian corn

This is a native of America. It affords farina in considerable quantity & hence can be made into bread. It affords saccharine matter enough to be conjoined with barly, ~~to~~ in the manufacture of ale. Indeed I have known ale made entirely from this grain. - In its green state, it is often used in this country; but

~~constitutes~~ is an article of diet very different from the same grain when fully ripe. It is indeed in this state, nothing more than an esculent vegetable, and like them is very difficult of digestion. A proof of this may be found in the fact that the grains will sometimes pass through the bowels unaltered. A great many of the bowel complaints which occur in the latter part of summer are attributable to the frequent use of boiled corn. —

Dr. Barton pronounces ~~the~~ maize to be the most nutritious of all the cerealia. But, though it undoubtedly contains a large quantity of nutriment, yet this statement is not quite correct. — Indian Mush is a very palatable & very nutritious preparation of corn. — Another valuable property of maize is, that it affords, in the small leaves which surround the ear, an article which, more than any other yet known, is adapted for the making of matrasses.

--- I will conclude my account of the cere-

-alia by quoting from Sir Humphrey Davy, the proportional ~~of nutriment~~ ~~contained~~ quantity of nutriment which each of them contains. — Of 1000 parts, the quantity of extractive matter (and this is about ~~equal~~ proportionate to the nutritious ~~portion~~) in ~~Middlesex wheat~~ ~~was~~ amounted in

Middlesex wheat to	955 parts.
North american wheat —	Do.
Norfolk barly — —	920
Rye — — — —	729
Oats — — —	743 &c.

There are several articles which consist principally of mucilage, which are very commonly prescribed by Physicians as articles of Diet, and therefore are worthy of our notice. —

<u>Sago</u> — is much employed as food for the sick. It is the pith of the Cycas circinalis, or rather a Fecula obtained from the pith; and might probably be made from many other vegetables.

It comes to us in small masses of a brown colour, without taste or smell. ~~and~~ Sol-
uble in water at the boiling point. It is very nutritious, & is generally prepared in the form of gelly, with the addition of some wine & sugar. ~~seasoned with sugar~~

Salop is a ~~article~~ fecula very similar in its properties to ~~the one last mentioned~~ Sago. - It has been proposed to prepare it by scraping off the skin of the root & baking it. - But it is of no consequence whether the skin remains or not, except that the article is rendered much cleaner ~~as~~ by having undergone the process. -

--- Tapioca is not unlike the preceding substances. It is obtained by maceration from the root of the Jatropha Manihot. It should always be well boiled before it is used as food for the sick or convalescent. If any hard lumps remain, they will prove irritating, & very indigestible. -

The Arrow-Root, or Maranta Arundinacea is a native of S. America, & the West India islands, particularly of Jamaica. It is however cultivated in the southern part of the United States; ~~and~~

The powder which is obtained from the root contains more mucilage than any other vegetable. The proper method of preparing it, is to add as much cold water as may form it into a paste, & then pour on boiling water till the mass is converted into a gelly. In children, ~~in~~ a with the addition of milk, it is useful in a state of health; but particularly so when they are diseased. — In Cholera & Diarrhoea it ~~is~~ constitutes an excellent diet. —

3

There is another class of articles very commonly employed as food; — I allude to

The Summer Fruits.

It is unnecessary to particularize these; & I shall, therefore content myself with mentioning their general properties. When ripe the more perfect of them have a taste compounded of Sweet & Sour. The orange is the best specimen of this. — But besides, ~~the~~ they have a peculiar flavour which cannot be described, by which they are distinguishable from one another. Dr. Cullen says they

are useful in quenching thirst. What he says of their correcting putrescency is wholly incorrect. Though they are useful in fever, it is not in this way. — In inflammatory diseases, when the stomach & bowels are not in an irritable condition, they are very suitable as articles of diet. They promote a secretion from the skin, & keep the bowels open. They are less nutritious than the generality of those substances which we use for food. In Dyspepsia & Gout they are disadvantageous. I have known the smell of an apple to induce spasm of the stomach. They contain some acid, but a great deal of ~~ste~~ accescent matter; and the pulp can hardly be acted on by the gastric liquor. I knew an instance where the pulpy matter of a water melon was vomited up several days after it had been swallowed. — The Summer fruits are useful in some diseases, and in Scurvy they will of themselves effect a cure. — In general, however, a great degree of flatulence follows their excessive use, and they are very apt to take on the fermentation in the ~~bowels~~ stomach.

Cholic, vomiting, & purging are apt to result from their employment. When unripe they are more injurious, containing a greater quantity of acid, & being less digestible. The different parts of the fruit have different properties. Thus the juice of the orange may often be admitted in cases of sickness, when the pulp must be absolutely forbidden.

It is unnecessary for me to enter into a disquisition respecting the relative virtues of each one of this class of aliments. Dr. Cullen gives a full account of them, & to him I refer you. Before dismissing the subject, however, it will be proper for me say a few more words. It is common before using these fruits, to subject them to certain Culinary processes, and there are some which it would be improper to use in a raw state. Of this nature is the Quince. Preserved peaches, Quinces, raspberries, & Strawberries are of easy digestion, & should be eaten with milk. In Dyspepsia & Gout, however, they should be denied. — —

It is a practice with many to swallow the stones

of the fruits which they eat. From this custom many distressing accidents have occurred. It arose, I believe, from an idea that digestion is a mechanical process; and from seeing chickens pick up stones with their food. - Death in many instances has occurred from Cholic produced in this way, and on dissection great masses of stones have been found in various parts of the intestines. Dr. Monro mentions a case of death from flint-stones; & Dr. Physick has a similar one from the stones of persimmons which completely obstructed the alimentary canal.

The Roots, leaves, & stems of various plants are employed as food. But other writers have entered fully into the consideration of these, & I shall not, therefore say much respecting them; but refer you for information to Dr. Cullen's work on the Materia Alimentaria.

*

The Potato

Lecture 4th The Potato is a vegetable which it will not be proper to overlook. It contains a large quantity of fecula, and in that respect approaches very near the Cerealia. During the late scarcity in Europe, the nutritious property of the potato was well ascertained. It was proved that 5 lb. of this vegetable afford as much nourishment as 1 lb. of wheat bread; and the extractive matter obtained by Davy amounted to ¼ of that which has derived from wheat. The potato is one of the safest kinds of vegetable food: it is less flatulent than almost any other, and ~~seldom~~ no one ~~any~~ article ~~except~~ from that Kingdom, except rice, ~~is~~ so seldom becomes acid on the stomach. There are, however, cases in which it disagrees with the organs of Digestion. There are idiosyncrasies, ~~&~~ should be inquired into ~~so~~ before we order not only this article, but any other which we might suppose adapted to the case. —

I have one more remark to make before leaving the subject of Vegetables. In cases of convalescence from Bilious Fever, I have often known the whole of the vegetable element which was taken, to pass through the bowels unchanged.

3

Animal Food

That Animal food is highly nutritious is now universally known. The flesh of Quadrupeds is that which is principally employed. By its being ~~anon~~ more similar to our own flesh, it has been thought by many that it must be more easily digested than vegetable ~~fo~~ aliment. Though I admit the conclusion, yet I have no hesitation in saying that is founded on wrong views. It is wholly unimportant to inquire into those essential properties of animal food which render it proper for the food of our species. Professor Cas-per has attempted to prove that flesh is the least nutritious, & fat the most so of all parts of an animal. He has succeeded in establishing the fact that the latter is highly nutritious; but the muscle is not so destitute of nutriment as he imagines. The gluten contain ~~both~~ in flesh & ~~fat~~ is ~~highly~~ very nutritive. –

The flesh of carnivorous animals is not used by mankind generally. That of the herbivorous is more pleasant to the taste, & on that account is preferred. Enough examples, however, have occurred to show that the former might very well be employed as ~~food.~~ ~~That~~

The idea that animal food is more putrescent in the system, than vegetable, dwelt on by the older writers, is wholly without foundation. Scurvy has been known to occur at sea though no other than vegetable aliment was employed.

There is a great variety in the density & toughness of meat, not only in different animals, but also in different parts of the same animal. The age & sex have great influence over these properties. The meat of the female of the same age is always easier of digestion, than that of the male. Castration has a great effect in rendering the flesh more tender & digestible. Age has an influence not inferior to that of sex. Old animals are dense & tough, young ones more tender. But the flesh of half grown animals, as veal & lamb, is harder of digestion than beef & mutton. - Some parts of the muscular system are masticated & digested with greater facility than others. Thus the wing & breast of a fowl are more tender than the leg.

Tendon, skin, the stomach, glands, and even bones may be made to furnish nourishment. It has long been known that the last article cooked in Papin's digester might be converted into a very rich

broth: but if they are only boiled in the common way bones yield much more nutritive matter than we should expect from their appearance. - I shall proceed to speak of a few particular animals, whose flesh in our country is most commonly used as food.

Beef.

The flesh of the common ox is that which is commonly brought to our market, & is the most important, if we except salt pork, of all the various kinds of animal food. It contains the requisite quantity of gluten & fat to render it very easy of digestion. Pork, which has more fat, and is therefore more nutritive, is inferior to beef in the quality just mention. That fat may be easily digested it should be mixed with the lean parts, and the union of the two, is better than either seperately. The ~~muscl~~ cow is generally lean, & the muscle of the bull is tough. I doubt very much whether an increase of fat is the only consequence of castration. The flesh is also rendered more tender ~~by~~ in animals which have undergone that operation.

Veal.

Is of a softer texture than beef, but harder of

digestion. When kept sometime, however, the incipient putrefaction proceeds does away, in a great measure, that stringiness by which veal is characterized.

Mutton.

This flesh is less dense than beef. The older the sheep the better is the mutton, at least at any period below 5 years. In our country this meat is not so much used, and therefore not so much attended to as in Europe. It is to this cause that the inferiority of our mutton is attributable, — not to the climate. — In England — Wales they do not kill their sheep till they have acquired the proper age. Ben butchers generally slaughter them ~~at 2 years~~ when they are no more than 2 years old.

Pork

I have remarked that as pork is fatter than other meats, it is also more nutritious. It serves, therefore, very well as the food of hard-working men, who gain their livelihood by daily labour. But it is very unfit for sedentary people, and those who are troubled with Dyspepsia. Its abundant quantity of fat renders it difficult of digestion.

Wild meats.

These are generally considered more easy of digestion than the domestic. Our own country affords a vast variety of game of the most excellent kind. Our Venison is better than that of any other part of the world, and is often recommended to convalescents from any disease. –

With birds of various kinds we are supplied in great plenty. They differ with regard to their qualities of nourishment, in some respects from animals. Those which live on flesh are little used. Those whose food is fish have a rancid ~~taste~~ matter which is intolerable to the palate. The birds which live on insects are always preferred. The omnivorous birds are also used ~~to~~ ~~an~~

Of Poultry our tables are furnished with every variety. ~~The Turkey is~~ It is more perfect here than in any other country. – Of this the Turkey is an example. It is an excellent dish, & easy of digestion: – ~~the~~ it should, however, be kept sometime before it is cooked. Very analogous to the turkey is the common ~~fowl~~. This is very tender, & one of the ~~most~~ best articles of animal diet. – ~~The~~ The Chicken may be used for the sick in the shape of broth. A roasted

chicken is not so digestible as a full grown fowl. It appears to be established by Effron's that an old dung-hill cock possesses more gluten & nutritious matter than any other animal. The hen is more tender than the cock, and the capon is preferred by epicures to either. — The poultry with black meat, as the goose & duck are more stimulating & harder of digestion that that with white meat. For persons in active health they answer very well, but never should be ordered when the stomach is delicate. Between wild & tame poultry, there is the same difference as between the wild & tame quadrupeds. — The pheasant & partridge are most allied to the common fowl, but are superior. The wild duck & goose, though inferior to those last mentioned are superior to the domestic. Dr. Cullen says that their superiority is owing to their having more arteries, & consequently a greater quantity of blood. — Whatever may be the cause it can be of little consequence; we know the result, & that is sufficient for our purpose. Of the ducks the canvas-back of Chesapeak is that most generally preferred. — To Dr. Cullen & Percival I refer you for a more minute account of these articles of diet. —

Eggs.

Before concluding this part of my lecture it will be proper for me to notice an article in very general use: — I mean eggs. These are among the most nourishing, least stimulating

and most easily digestible of any species of animal food. If and raw or soft boiled they are excellent ~~food~~ for convalescents from almost all diseases. With the oyster they are generally the first animal food that we allow our patients after sickness. All their good properties, however, are destroyed by boiling them hard. Both the yolk & albumen are exceedingly difficult of digestion when exposed to a great heat. The albumen may be boiled so hard as to scratch glass. Eggs are often used as food by those whose religious belief precludes the use of flesh on certain days. Hence in the South of France a great many omelets are made from this article, all which modes of preparing it render it more difficult of digestion. It is often used to give flavour to other articles, & is here generally improper. The coat of eggs or which surrounds veal Cutlets & oysters is extremely difficult of digestion. Eggs in combination with brandy & wine are often useful in low or typhus diseases. The mixture is powerfully stimulating & very nutritious. Dr. Cullen says that whether fluid or coagulated ~~they~~ eggs are ~~seen~~ by some persons always rejected from the stomach. These are cases of ~~idio~~ Idiosyncrasies extremely rare. I have never met with one.

The next article which claims our attention is

Fish

It has already been mentioned that in some countries the inhabitants live altogether on fish. Haller thinks they constitute the first animal food of man; as his natural innocence would lead him to kill that animal first which died without a groan. - Fish are less stimulating & nourishing than quadrupeds; - therefore may be employed where we desire a diet more stimulating than vegetables but less so than animal food. A diet exclusively of fish has been supposed to be favourable to generation: but this not the case. For the women of the Esquimaux, who live almost exclusively on fish, are less fruitful than those of other nations. —

The Oyster is a shell fish used more in this country than in any other. It is highly proper where we wish an article nutritious, without stimulating. It is often the first thing which physicians allow when they permit their patient to change from a vegetable diet. That part which is improperly called the heart is difficult of digestion, & should therefore be thrown away. The best way of taking oysters is either in a raw state, or when they are merely warmed in their own liquor. There are various modes of cooking them, all which are injurious; frying particularly so. There are certain cases of local diseases of an inflammatory nature in which the patients appetite is very good, & yet animal food contra-indicated. The Dr. Physicke has been in the habit of allowing bread dipped in the liquor of oysters. The patient thus gets the flavour of animal food, without any of its stimulating properties. He will often be satisfied with this, & exceedingly grateful for the allowance. —

The Clam is another shell fish, which is tough, & harder of digestion than the oyster, and is not suitable for convalescents.

In this country we never use Muscles, Snails &c. as they are forced to do in Europe. I shall, therefore, say nothing about them.

It will be proper for me to say a few words relative to the lobster & crab. They are generally considered as shell fish, though naturalists rank them among the insects. Dr. Cullen says there is very little difference between them. But he is mistaken. The Lobster is more dense & tough, & less nutritious than the Crab. The latter is fatter than the former, & should greatly be preferred. But they are both sickly articles to persons unaccustomed to them.

There are certain other amphibious animals which are used as food. In America we do not employ Frogs, though in France they are by some considered as a delicacy. Nor are we much in the habit of eating Snakes. Dr. Barton, however, used to tell us that the fine flesh of the rattle-snake is delicious; and that a person who had tasted it once would most probably feel an inclination to taste it again. Vipers & Lizzards are employed on the continent of Europe. They were formerly supposed to be Medicinal; but such notions have become much less prevalent.

Lect. 5. The only amphibious animal which is much used in America is the turtle, or testudo. The soup made from the green turtle, the testudo is rich, nutritious, and easy of digestion. The French physicians are much in the habit of recommending turtle-broth to the convalescent. It possesses, however no advantages over that which is made from other meats. — The Testudo ferox, or snapper is also employed. The flesh of this is decidedly more tough, or difficult of digestion. — The Testudo concentrica or terrapin is much more generally used. Stewed with stimulating articles, or well baited, it is of easy digestion, and forms a suitable food for convalescents. It should not, however, be allowed when any inflammatory symptoms are visible. —

Milk.

Before leaving the consideration of animal substances it will be proper to say a few words on Milk. This is the first food of a large number of animals, and of man for ~~the~~ several months. The Mother's milk is different from that of the cow. To Dr. Cullen, however, I refer you for an analogical account of this article. ~~My~~ ~~to~~ I shall go no further than to state those ~~changes which take place spontaneously~~ constituent parts which are most obvious. When milk is left to stand, it divides itself into 3 parts, the cream, the curds, or the whey; or oily, vegetable, or watery part. These are easily seperated, or possess totally distinct properties. Milk when first drawn is a fluid which contains much nutritious matter. Many suppose that it is more easily digested from its resemblance to Chyle, and that it

gets into the lacteals lips changed. You must guard your mind against this sophistry. They do not recollect that on its admission into the stomach it is seperated into different parts; ~~the curds being~~ that the curds are coagulated & acidiptous; and that the whole must be mixed with the bile & pancreatic juices before it can be offered to the mouths of the lacteals. By a parity of reason we might apprehend that blood would be the most nutritious & digestible of all the different kinds of food; but this is not the case. All the changes which solid articles undergo, milk also, & every other alimentary fluid must be subjected to. It is easy of digestion; but not on the principle above alluded to; and is very generally employed as ~~the food~~ in youth, & by some in advanced life. Milk is a kind of intermediate article between animal & vegetable substances, and is allied to both. From its curd it resembles ~~the~~ animal food, from the sugar of the whey it is allied to vegetable, and the oil resembles both. Each of these is nutritious. Combined they constitute an article fully competent to sustain & support life. From Riley's narration we may observe that the Arabs, who employ milk as their principal food, attain a very advanced life. His account however, without any impeachment of his veracity, must be exaggerated. In the early years of life cow's milk is very ~~healthy~~ wholesome. In many diseases it is an important article of Diet. When the system is enervated by chronic disorders, which, however, are too inflammatory to admit a diet purely animal, we may resort to this with great advantage.

It is easy of digestion & sufficiently nutritious to keep up a proper degree of strength. Those ~~of an indigestible~~ substances which are indigestible, ~~upon~~ are injurious not only from their inability to furnish nourishment, but also because they frequently stimulate the heart & arteries to undue exertion. Milk then is beneficial, ~~because~~ in many cases, because it contains ~~the~~ less nutriment than any other article equally digestible: it is also less apt to clog than almost any other. ~~single~~ I have witnessed almost miraculous effects produced by a milk diet. Dr. Rush & myself once attended a young man, who to use his own expression was rotten with the Pox. Venus & Mercury had alternately held possession of his frame for a long time, and between these two rival divinities he was in a most deplorable condition. Our prescription was country air, and a diet composed of milk & vegetable food: the effects were truly wonderful. His ulcers, which had been supposed venereal, healed; his general health rapidly improved, and a complete cure was effected. During the reign of the Humoral Pathology, milk was employed to correct the vitiated state of the fluids. No theory is so bad as not to give rise to sound practice. Dr. Cullen recommends this article in cases where the fluids are vitiated as in Lues Venerea, & Cancer. Though the pathology is not correct, yet there is ~~not nothing~~ no remedy so useful in the latter affection as milk. I have known a case, ~~where~~ in which for 8 years, the progress of a cancerous sore has been arrested by a diet of milk & vegetables: - the lady who was afflicted with it experiences no pain; but she can always bring on a return of ~~pain~~ it by eating a little animal food. - In ~~Pul~~ Pulmonary Consumption milk has been much employed; & to this day, in Europe, asses

milk is a favourite prescription. This is as old as Galen. — I believe, however, that it has often done harm in Consumption, by producing too much febrile action. Therefore before recommending it to a ~~Phth~~ patient affected with Phthisis, you should always make it a rule to inquire whether it produces fever, or hæmoptysis; as these affections are not uncommon consequences of its employment in that disease. The Whey is much safer, as it is much less nutritious. This may be taken with impunity in many cases where the milk should not be allowed. — It is unnecessary for me to relate ~~all~~ the particular diseases in which a milk diet is advantageous. It should be used in all states of the system where there is febrile action, but where the feebleness & debility are so great as to render nutritious food necessary. —

Cream

The Milk, as I before stated, may be divided into several parts. After having been taken from the cow, if it suffered to stand for some time, the cream seperates, rises, & floats on the surface. The rapidity of this process is said to depend ~~upon the~~ in great measure on the surface exposed to the air: — in pans it is ~~condu~~ finished much more speedily than in deep vessels. The proportion of cream varies according to the diet of the animal. Cream contains besides the oily part, some curds, & a considerable portion of whey. Butter resembles the expressed oil of vegetables, and also partakes of the nature of animal oil. It is obtained by a process with which you must all be familiar. —

Curd.

The curds or coagulable portion may be obtained by suffering

the milk to stand for several days. But procured in this way it is sour, constituting what is commonly called bonny-clabber. The best method of obtaining it is by rennet. The philosophy of this process has not been fully investigated: it is sufficient, however, for us to know that by mixing with the milk an infusion of the stomach in warm water, we may cause a speedy coagulation. This coagulated portion is ~~what~~ that from which cheese is made. It putrefies like animal substances. Cheese differs according to the processes used in preparing it, and depends very little upon the difference in the milk. All cheese is nutritious & very stimulating; and is therefore to be used in large quantities only by those who use much exercise, & labour. For the sick & sedentary it is an improper article of food. The difference ~~depends on~~ of the various kinds of cheese depends upon the proportionate quantity of oil & coagulable matter; and upon a variety of other circumstances, as ~~for~~ the degree of pressure, age &c. Cheese is sometimes toasted, and nothing is less soluble in the stomach. It constitutes an excellent diet for hard-working people; ~~and~~ The oil which runs out of old cheese is a very good application to ulcers of mucous surfaces. I have cured many cases of ulcers ~~in the nostrils~~ of this kind, especially when situated in the nostrils: one had resisted all the other remedies which I had employed.

Whey —

Whey is by far the largest portion of the milk, being $\frac{7}{8}$ of the whole. It contains a portion of ~~all~~ oil & cheesy matter;

is a mild, nutritious fluid; and admirably calculated for a common drink in Pulmonary Consumption. It rarely turns acid on the stomach; but, as it contains a portion of sugar, it is contra-indicated in some cases when the acidity is very liable to occur. Butter-milk is a preparation which consists principally of whey. It is acid, & more caseous, consequently more nutritious than that article. It has been employed in Consumption. Dr. Shipper, the former professor of anatomy in this University, says he effected a complete cure by prescribing ~~the~~ butter-milk. I have not been so fortunate. It is generally of difficult digestion, and less suitable to Dyspeptic cases than milk or whey. —

There is a preparation often employed, which you should all know how to make in the proper way. — I allude to Wine-Whey. — It is prepared by boiling a quantity of milk, & adding to the quantity of ~~wine~~ Madeira, teneriffe, or ~~Port~~ Sherry wine. The wine should be added just as the milk begins to boil, and should be briskly stirred. As the addition of so large a portion of a cold fluid must reduce the temperature considerably, and as the boiling heat is required that coagulation may take place fully, it will be proper to heat the mixture again to that point. The curd should be separated without being broken; and sugar may be added to the remainder; but this is not necessary. You should be extremely careful not to allow any of the curd to be floating in the whey; as this will frequently defeat the purpose for which the prepar-

ation is made, and is in some cases very injurious. The liquor therefore should be strained through fine muslin if any of this matter remains in it. The best way is to remove the curd entire, without allowing it to break. Often the whey with the proportion of wine I mentioned will be more stimulating than the case requires. Here we should not use lisp wine; as then the coagulation would not be effected; but should dilute the fluid by the addition of some mucilage of gum arabic. Wine whey is very commonly used. It is a gentle stimulant, & at the same time affords nourishment. It may frequently be employed where wine or ardent spirits would be inadmissable. ~~Milk for~~ Milk-punch is not so good a preparation. ~~When the is acid in~~ The milk coagulates in the stomach, & is sometimes difficult of digestion. But if the digestive organs ~~are~~ are in a good condition, and a stimulant is required, this may be given with impunity & advantage. —

In these cursory remarks on Milk, I have omitted the Chemical history, as ~~to~~ you will find this detailed in Cullen & other writers. ~~They~~ It is not of use to us in a practical point of view. —

These are all the substances from the vegetable & animal kingdom to which I thought it worth while to call your attention. Those omitted are not important, or may be ranked along with some one of those whose properties have been detailed.

Cooking.

The Physician must often descend from the chamber to the Kitchen. Cookery is to the Materia Alimentaria, what Pharmacy is to the Materia Medica. — I hardly need tell you that cooking consists in the various modes of applying heat to food. Many substances are taken without having undergone this process. In general the application of heat renders food of easier digestion. — Cabbages, however are an exception. Cucumbers also are better taken in a raw state. Dr. Clark tell us that in some parts of Asia raw turnips are used, & considered wholesome. That the properties of the food are altered by ~~cooking~~ cooking, is manifested by the ~~alteration~~ change in the taste. Roasted & raw apples are a good example of this ~~truth~~ fact. Their taste is entirely different. In general, ~~food~~ vegetables are rendered more digestible & less flatulent. Here too roasted apples are an example. They may often be used, when the raw apple would by no means be allowed. The chemical changes which are effected, are not of sufficient interest to claim our attention. — The cookery of Animal food also alters its properties, & more, perhaps, than that of vegetables, because more varied. There are certain preparatory operations which it will be requisite to notice; ~~which~~ all which have for their design the preservation of the food: — such are

salting, drying, pickling in vinegar &c. — Meats are also allowed to enter into an incipient putrefaction, for the purpose of rendering them more tender & easier of digestion. But we should be careful not to let this proceed too far. The putrid taste is the only indication ~~who~~ that the food has been kept too long. Epicures sometimes ~~on~~ prefer this taste. — An effect ~~impure~~ ~~on fatty matter~~ is produced ~~by~~ on fatty matter by keeping, different from putrefaction: — I allude to rancidity. This seems to be in consequence of the absorption of oxygen, & is accompanied with a taste not unlike that of empyreumatic oil, or fat which has been exposed to too great a heat, or one too long continued.

— Salting is a process very much used for the preservation of food. Salt is ~~also employed~~ valuable as a condiment, and antiseptick; I mean that it ~~is and~~ preserves the latter property only with regard to animal matter. Salted meat is an article of great importance where fresh cannot be obtained. It is much employed at sea, and if taken with a due proportion of vegetables seems to answer better than fresh. ~~The~~ It may be remarked that salt renders ~~a~~ flesh more dense & hard of solution, and consequently more stimulating. — Beef & pork are the principal meats which are

served in this manner. - ~~After~~

After salting, smoking is also frequently employed. What many this effects is of no consequence; seeing its usefulness is well ascertained. - Smoked meats are taken raw, and in small quantities as a relish. Bacon constitutes a large portion of the animal diet in Summer, in this country. It is often used with advantage in cases of disease, and is therefore medicinal. I have said that salt meats are more difficult of digestion. - ~~They are~~ Smoked meats are sometimes useful in exciting an appetite when this is very poor. From this property they are also liable to prove injurious by tempting a person to overload the stomach. - When a man to his other food at dinner adds a piece of ham, instead of satisfying, he excites his appetite, and eats more than is useful to his health. - Another disadvantage from food of this kind is, that it causes thirst, and thus tempts ~~the~~ a person to distend his stomach with drink. - In many dysenteric cases ham is a valuable article; but sometimes it is not allowable, and never in the commencement. - In Cholera Infantum it is sometimes of advantage. But on the whole it is a very questionable article, and sometimes taken in a state of convalescence causes a relapse. I have a case of the kind in which ~~take~~ the

nurse thought it proper, when the child was on the mend, to give it some bran. A relapse was the consequence & the child ~~was~~ was with difficulty saved. The late Dr. Rush was in the habit of prescribing it as an article of diet in many cases of disease, where he wished to convey nourishment into the system, but where the stomach was in a delicate condition. It should always be well boiled. —

Lect. 6. Vinegar is often used ~~in the~~ for the preservation of food. Dr. Rush used to consider pickles as nothing more nor less than vinegar in a solid state. The proportion of the substance subjected to its operation is so small that it can have very little influence. It only serves as a sponge to absorb the acid. —

Heat is applied to meat in a variety of ways, on which I shall now proceed to expatiate.

First of Boiling. ~~Alle~~ All modes of cooking have for their object the improvement of the article in digestion & solubility. But some hard working men prefer food of a difficult digestion. It affords a sensation, a stimulus to their stomach which is pleasant rather than otherwise. — In common, however, the food should be as digestible as possible. Exposure of meat to boiling water renders it in general easier of digestion. The membranous, tendin-

ous & ligamentous parts are best treated in this way, and are converted into a gelly. From meat, however, boiling extracts the gluten, & the remaining part is not so nourishing in consequence. Potatoes lose 40 per cent of their weight by roasting, & only 2 by boiling; prepared in the latter method, therefore, they yield most nutritious matter. — Broths are preparations made by boiling meat, and are much used. The French are very fond of them & have a great variety. In general they make broth from beef, ~~with~~ & the most usual proportion is 5 lbs. of the meat, to 8 lbs. of water. As we wish the strength increased we evaporate the water, & when a gelly is desired, we ~~may the~~ continue the evaporation till the fluid coagulates when dropped on a dish. When free from grease and vegetable infusions broth is an article of easy digestion. The proportion of nourishment which may be extracted from meats, is, according to the French academy, agreeable to the following scale. 1st. An old cock; 2nd. veal; 3rd. mutton; 4th. beef.

Beef-tea is a preparation analagous to broth. It is less nutritious, however, and may be prescribed where that cannot be allowed.

In making chicken broth, the skin which contains a great quantity of fat, should be taken off. You will

find ~~so~~ that it is very common to consider chicken broth very mild, and innocuous in any case of disease, however inflammatory. But it may often prove injurious. In the Yellow-fever many relapses were owing to the use of this article.

Roasting is another mode of using heat. In this process much of the watery parts is evaporated, but the nutritious portion remains. As large masses are generally subjected to this process, the outer parts become crispied by the heat, & the juices are thus hindered from escaping. - Roasted meat is highly nourishing, & easy of digestion; and is more stimulating than boiled meat. -

Baking is so analagous to the process last mentioned, that is not worth while to notice it particularly. One remark, however, may be made; - viz. - the heat in ~~roasting~~ is more equally applied in Roasting, than in Baking; & therefore the former method is to be preferred. -

Broiling is a rapid kind of roasting. The outer parts are crispied, the juices confined, and the whole tender, & easy of digestion.

Frying is very similar to the last mentioned mode of cooking, except that in the former case the heat is directly applied, in the latter indirectly. Substances when they are

fried are surrounded ~~by~~ by a fatty matter, which ~~exposed~~ is converted by heat, into a kind of empyreumatic oil, very stimulating; and, when united with the crust that ~~is~~ ~~one~~ ~~can~~ sometimes ~~and~~ envelopes the meat, is exceedingly difficult of digestion.

Stewed Meats differ from boiled only in retaining more nourishment. They are between boiled & roasted in this respect. It is unnecessary to enter minutely into a detail of all the methods used in cooking. There are certain condiments which are very commonly used, & which it ~~would~~ will be proper to mention.

Of Salt I have already spoken. Pepper, mustard, the various spices, horseradish &c. act as a stimulus to the organs, and give flavour to the food. They are often useful; but when stimuli are contra-indicated, are highly injurious.

Before concluding ~~our~~ ~~my~~ our account of the nutrientia, it will be proper to treat briefly of the various drinks.

See vol. Fin.

The dew was falling fast, the stars began to blink;
I heard a voice; it said, "Drink, pretty creature, drink!"
And, looking o'er the hedge, before me I espied,
A snow-white mountain Lamb, with a maiden at its side.

No other sheep were near, the Lamb was all alone,
And by a slender cord was tether'd to a stone;
With one knee on the grass did the little maiden kneel,
While to the mountain Lamb she gave its evening meal.

'Twas little Barbara Lethwait, a child of beauty rare:
I watch'd them with delight; they were a lovely pair.
And now with empty can, the maiden turn'd away,
But ere ten yards were gone her footsteps did she stay.

Towards the Lamb she look'd, and from that shady place
I unobserv'd could see the workings of her face:
If nature to her tongue could measur'd numbers bring,
Thus, thought I, to her Lamb that little maid would sing.

"What ails thee, young one? what? why pull so at thy cord?
Is it not well with thee? well both for bed and board?
Thy plot of grass is soft, and green as grass can be:
Rest, little young one, rest; what is't that aileth thee?

To some Children listening to a Lark.

SEE, the lark prunes his active wings,
Rises to Heav'n, and soars, and sings!
His morning hymns, his mid-day lays,
Are one continued song of praise.
He speaks his Maker all he can,
And shames the silent tongue of man.
When the declining orb of light
Reminds him of approaching night,
His warbling vespers swell his breast;
And, as he sings, he sinks to rest.
Shall birds instructive lessons teach,
And we be deaf to what they preach?—
No, ye dear nestlings of my heart;
Go, act the wiser songster's part:
Spurn your warm couch at early dawn,
And with your God begin the morn.
To him your grateful tribute pay,
Thro' ev'ry period of the day,
To him your ev'ning songs direct;
His eye shall watch, his arm protect:
Tho' darkness reigns, he's with you still;
Then sleep, my babes, and fear no ill.